

Listing of Claims:

Claims 1-8 (Canceled).

9. (Currently Amended) A device for spread spectrum communication comprising:

a toggle detecting unit which detects a candidate of a toggle point existing in a carrier of a received signal by correlating between the carrier of the received signal and a pre-held expected signal, wherein the pre-held expected signal is a signal including a waveform of the toggle point which is expected to be in the carrier of the received signal and is a signal having a length corresponding to 2 chip-times of a spread code or is a signal having a shorter length than 2 chip-times of the spread code; and

a demodulating unit which demodulates the received signal by multiplying the received signal by the spread code which is shifted according to a shift amount calculated based on the detected candidate.

10. (Previously Presented) The device as claimed in claim 9, wherein:

said toggle detecting unit outputs a toggle signal as a result of detecting the candidate of the toggle point;

a candidate of the shift amount which is to be provided to the spread code is calculated based on cross-correlation of the toggle signal and an absolute value of a differentiated value of the spread code;

said demodulating unit demodulates the received signal by shifting the spread code with respect to each candidate of the shift amount, and

effectiveness of a carrier spectrum of the received signal demodulated in the demodulating unit is inspected.

11. (Previously Presented) The device as claimed in claim 10, wherein the candidate of the shift amount which is to be provided to the spread code is calculated by correlating between a Fourier transformed value of the toggle signal and a Fourier transformed value of the absolute value of the differentiated value of the spread code.

12. (Currently Amended) A high-speed synchronization establishing method for spread spectrum communication, said method comprising:

detecting a candidate of a toggle point existing in a carrier of a received signal;

calculating a shift amount based on the detected candidate;
and

demodulating the received signal by multiplying the received signal by a spread code shifted according to the calculated shift amount;

wherein the candidate of the toggle point is detected by correlating between an expected signal and the carrier of the received signal; and

wherein the expected signal is prepared previously and includes a waveform of the toggle point expected to be in the carrier of the received signal and has a length corresponding to 2 chip-times of the spread code or has a shorter length than 2 chip-times of the spread code.

13. (Previously Presented) The high-speed synchronization establishing method for spread spectrum communication as claimed in claim 12, wherein:

a toggle signal is outputted as a result of detecting the candidate of the toggle point;

a candidate of the shift amount which is to be provided to the spread code is calculated based on cross-correlation of the toggle signal and an absolute value of a differentiated value of the spread code;

the received signal is demodulated with respect to each candidate of the shift amount; and

effectiveness of a carrier spectrum of the demodulated received signal is inspected.

14. (Previously Presented) The high-speed synchronization establishing method for spread spectrum communication as claimed in claim 13, wherein a Fourier transformed value of the toggle signal and a Fourier transformed value of the absolute value of the differentiated value of the spread code are correlated when the candidate of the shift amount which is to be provided to the spread code is calculated.

15. (New) The device as claimed in claim 9, wherein the pre-held expected signal is a signal having a length corresponding to 2 chip-times of the spread code.

16. (New) The device as claimed in claim 9, wherein the pre-held expected signal is a signal having a shorter length than 2 chip-times of the spread code.

17. (New) The high-speed synchronization establishing method for spread spectrum communication as claimed in claim 12, wherein the expected signal has a length corresponding to 2 chip-times of the spread code.

18. (New) The high-speed synchronization establishing method for spread spectrum communication as claimed in claim 12, wherein the expected signal has a shorter length than 2 chip-times of the spread code.